Novel Biomarker for an Aggressive Hepatocellular Carcinoma (HpSC HCC): A NEW CO-DEVELOPMENT OPPORTUNITY

Reference No.: E-139-2010

Keywords: Diagnostic, cancer, liver, hepatocellular carcinoma, HCC, biomarker

Background:
The National Cancer Institute is seeking parties interested in collaborative research to co-develop biomarkers for liver cancer. In addition to diagnostic, prognostic, and treatment applications, this technology may enable clinicians to effectively stratify patients for more aggressive cancer treatment and prioritize candidates for liver transplantation.

Technology:
Scientists at the National Cancer Institute Laboratory of Human Carcinogenesis have discovered that Stearol-CoA desaturase-1 (SCD-1) is associated with hepatocellular carcinoma (HCC). Utilizing a microarray to analyze HCC patient samples, the investigators found SCD-1 is elevated in liver tumor tissues and it is a marker for a highly aggressive form of HCC, hepatic stem cell-like HCC subtype (HpSC HCC), which retains stem-cell features capable of cellular plasticity and cell motility. The investigators observed SCD-1 to be significantly elevated in HpSC tumors in comparison to less aggressive HCC tumors, and it has been associated with poor patient survival. *In vitro* studies demonstrate SCD-1 inhibition and/or addition of saturated palmitic acid reduces HpSC HCC characteristics. Potential commercial applications include a method to diagnose HCC, a method to prognose patient survival, a method to stratify HCC for appropriate treatment, and a method to treat HCC.

Competitive Advantages: Modulation of SCD-1 reduces HpSC HCC characteristics

R&D Status:
In vitro and *in vivo* data (human) available

IP Status: PCT Application No. PCT/US2011/032285 (04/13/2011)

Contact for information: Please submit an information request form referencing invention no. E-139-2010 on http://techtransfer.cancer.gov, or contact: John D. Hewes, Ph.D., NCI Technology Transfer Center, Tel.: 301-435-3121, Email: hewesj@mail.nih.gov.